(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 470 764 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
27.10.2004 Bulletin 2004/44

(51) Int Cl.[7]: **A45C 9/00**, A45F 4/02, A45C 15/06

(21) Application number: **03028281.8**

(22) Date of filing: **10.12.2003**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR
Designated Extension States:
AL LT LV MK

(30) Priority: **21.04.2003 KR 2003025120**

(71) Applicant: **Kang, Jong Shin**
Chunan Choongchungnam-Do (KR)

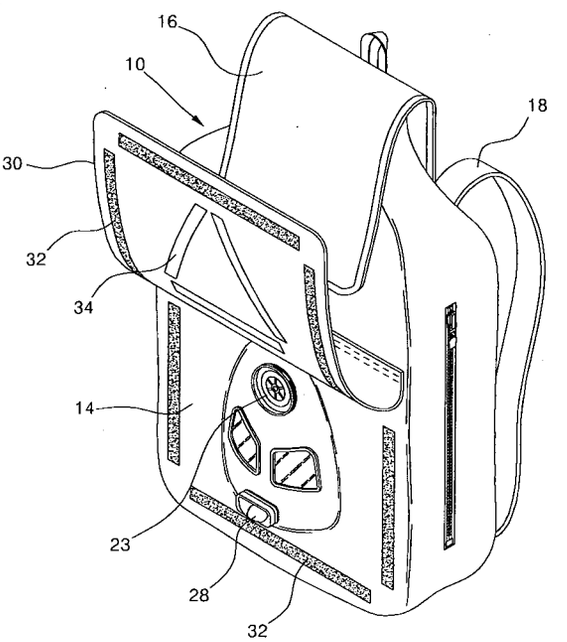
(72) Inventor: **Kang, Jong Shin**
Chunan Choongchungnam-Do (KR)

(74) Representative: **Betten & Resch**
Patentanwälte,
Theatinerstrasse 8
80333 München (DE)

(54) Backpack having gas mask

(57) Disclosed is a backpack having a gas mask. The backpack includes a body (10) made of a sack shape and having a front surface (12) and a rear surface (14), a pair of shoulder bearing straps (18) attached to the front surface (12) and at least one pocket positioned at the rear surface (14) for receiving trifling articles, a mask overlapped over the front or rear surface of the body (10) and having a detachable filter (24) and an auxiliary cap (26) for separately enclosing and sealing surroundings of a mouth and nose of a wearer, and an auxiliary cover (30) installed to the rear surface (14) of the body (10) for opening/closing the mask. The backpack can be used as a gas mask to enable a wearer to evacuate from a dangerous area in case of emergency such as fire or toxic gas outflow.

FIG. 1



EP 1 470 764 A1

Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to a backpack used for carrying personal effects or serving as a schoolbag of a student, and more particularly, to a backpack having a gas mask capable of enabling a wearer to evacuate from a dangerous area in case of emergency such as fire or toxic gas outflow.

Background of the Related Art

[0002] Various backpacks used for carrying personal effects or serving as a schoolbag have been proposed. These backpacks are made by cutting fabrics into a front fabric and a rear fabric and stitching edges of the front and rear fabrics to form a sack shape of a body having an opening at an upper portion thereof The backpack is filled with the personal effects through the opening. The front fabric facing to wearer's back has a possible flat surface so that the backpack is stably supported on the back. The rear fabric opposed to the front fabric has a convex surface to enlarge a receiving space of the effects.

[0003] The body includes a pair of shoulder bearing straps attached to the front surface thereof, and pockets positioned at the rear side thereof for receiving trifling articles. The backpack has only a function of carrying things simply.

[0004] Recently, under drastic social circumstances there are unexpected situations, such as fire or toxic gas outflow. At that time, if people do not properly cope with the situation, they may be involved in a fatal accident To provide against emergencies, it is inconvenient for the general public and students to carry a gas mask.

[0005] The most important act is to safely and quickly evacuate from the dangerous area. Therefore, the present invention proposes a temporary respiratory appliance to be used when evacuating from the dangerous area, in which the general public and students may carry a separate gas mask to provide against emergencies.

SUMMARY OF THE INVENTION

[0006] Accordingly, the present invention is directed to a backpack having a gas mask that substantially obviates one or more problems due to limitations and disadvantages of the related art.

[0007] An object of the present invention is to provide a backpack including a mask integrally installed to a front or rear surface of the backpack and a respiratory unit detachably installed to the mask, so that the backpack can be used as a gas mask to enable a wearer to evacuate from a dangerous area in case of emergency such as fire or toxic gas outflow.

[0008] To achieve the object and other advantages, according to one aspect of the present invention, there is provided a backpack having a gas mask, the backpack comprising: a body made of a sack shape and having a front surface and a rear surface, a pair of shoulder bearing straps attached to the front surface and at least one pocket positioned at the rear surface for receiving trifling articles; a mask overlapped over the front or rear surface of the body and having a detachable filter and an auxiliary cap for separately enclosing and sealing surroundings of a mouth and nose of a wearer; and an auxiliary cover installed to the rear surface of the body for opening/closing the mask. The backpack can be used as a gas mask to enable a wearer to evacuate from a dangerous area in case of emergency such as fire or toxic gas outflow.

[0009] It is to be understood that both the foregoing general description and the following detailed description of the present invention are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this application, illustrate embodiment(s) of the invention and together with the description serve to explain the principle of the invention. In the drawings:

[0011] Fig. 1 is a perspective view of a backpack having a gas mask according to one preferred embodiment of the present invention;

[0012] Fig. 2 is a cross-sectional view of a backpack having a gas mask according to one preferred embodiment of the present invention;

[0013] Fig. 3 is a view indicating a state where a backpack of the present invention is used as a gas mask; and

[0014] Fig. 4 is a view indicating a state where a backpack of the present invention is used as a tripod safety sign on a street at parking or stop of an automobile.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0015] A preferred embodiment according to the present invention will now be explained with reference to the accompanying drawings.

[0016] Fig. 1 is a perspective view of a backpack having a gas mask according to one preferred embodiment of the present invention, in which reference numeral 10 indicates a body of backpack

[0017] The body 10 has a shape of sack with an opened upper portion. Specifically, the body 10 consists of a front surface 12 and a rear surface 14. The body 10 is provided on the upper portion with a cover 16 to open/close the opened upper portion. Preferably, the body 10 is made of fireproof fabric.

[0018] Also, the body includes a pair of shoulder bearing straps attached to the front surface 12, and pockets positioned at the rear surface 14 for receiving trifling articles. Such construction is similar to that of a conventional backpack. The present invention is characterized in that the backpack may be served as the gas mask if the backpack is stood bottom up to have the same shape as a hood.

[0019] Specifically, the gas mask may be applied to any one side of the front or rear surface 12 or 14 of the body 10, as shown in Fig. 2. In the embodiment, a mask 20 is overlapped over the rear surface 14 in such a manner that the gas mask has the same shape as a wearer's face. The mask 20 includes an airtight sealing 22 around an inner periphery of the gas mask to closely contact the wearer's face and the gas mask. The airtight sealing 22 is a gasket so that the wearer's face is closely contacted with the gas mask to shield an interior of the mask 20 from the atmosphere, thereby preventing toxic gas from flowing in the interior thereof. The gas mask has a convex portion and a sealing paper 21 for covering the convex portion receiving a filter and a portable oxygen container therein.

[0020] Also, the gas mask includes a filter 24 detachably engaged to an intake port 23 located at a front center of the gas mask and an auxiliary cap 26 for separately enclosing and sealing surroundings of a mouth and nose of the wearer, as shown in Fig. 3. The auxiliary cap 26 is connected to one end of a hose 27 of a given length, and the other end of the hose is connected to a portable oxygen container 29, so that the wearer can breathe during a given time The mask 20 can be stably seated on a head of the wearer by a binding band 25

[0021] The mask 20 is provided at a proper front thereof with a light emitting element 28 for illuminating a room when putting out the lights due to a state of emergency. Alternatively, an alarm may be provided to the gas mask for informing a position of the wearer, besides the light emitting element

[0022] An auxiliary cover 30 is detachably installed to a center portion of the rear surface 14 of the body for opening or closing the mask 20. Velcro fasteners 32 are attached to both facing surfaces of the auxiliary cover 30 and the rear surface 14.

[0023] The auxiliary cover 30 has a tripod display 34 made of luminescence or retroreflective material on an inner side thereof, as shown in Fig. 4, so that the backpack of the present invention can be used as a tripod safety sign on a street at parking or stop of an automobile.

[0024] Explaining the usage of the backpack of the present invention, the body 10 of the backpack keeps personal effects therein in usual, but the backpack can be used as the gas mask in case of emergency such as fire or toxic gas outflow.

[0025] Specifically, the user removes the personal effects from the interior of the body 10, and opens the auxiliary cover 30 from the rear surface 14. Then, the user tears off the sealing paper 21 from the inside of the mask 20, and takes the filter 24 and the portable oxygen container 29 out of the mask 20 to install them to the intake port 23 and the auxiliary cap 26, respectively. The user stands the body 10 bottom up, and inserts his or her head into the body 10. Then, the user wears the mask 20 by use of the binding band 25.

[0026] When putting out the lights due to the emergency, the light emitting element 28 installed to the front surface of the gas mask is switched on, so that the wearer can evacuate the actual spot

[0027] With the above description, the backpack of the present invention keeps personal effects therein in usual, but the backpack can be used as the gas mask in case of emergency such as fire or toxic gas outflow to enable the wearer to evacuate from the dangerous area

[0028] The wearer can safely evacuate from the dangerous area by use of the light emitting element In addition, the position of the wearer may be informed by an alarm light or sound, so that the wearer may be quickly found by a rescuer to save a life.

[0029] Also, the tripod display provided to the inside of the backpack may be used as the tripod safety sign on a street at parking or stop of an automobile.

[0030] The forgoing embodiment is merely exemplary and is not to be construed as limiting the present invention. The present teachings can be readily applied to other types of apparatus. The description of the present invention is intended to be illustrative, and not to limit the scope of the claims. Many alternatives, modifications, and variations will be apparent to those skilled in the art.

In summary, an embodiment of the invention can be described as follows:

[0031] Disclosed is a backpack having a gas mask. The backpack includes a body made of a sack shape and having a front surface and a rear surface, a pair of shoulder bearing straps attached to the front surface and at least one pocket positioned at the rear surface for receiving trifling articles, a mask overlapped over the front or rear surface of the body and having a detachable filter and an auxiliary cap for separately enclosing and sealing surroundings of a mouth and nose of a wearer, and an auxiliary cover installed to the rear surface of the body for opening/closing the mask. The backpack can be used as a gas mask to enable a wearer to evacuate from a dangerous area in case of emergency such as fire or toxic gas outflow.

Claims

1. A backpack having a gas mask, the backpack comprising:

a body made of a sack shape and having a front surface and a rear surface, a pair of shoulder bearing straps attached to the front surface and at least one pocket positioned at the rear surface for receiving trifling articles; and
a mask overlapped over the front or rear surface of the body and having a detachable filter and an auxiliary cap for separately enclosing and sealing surroundings of a mouth and nose of a wearer.

2. The backpack as claimed in claim 1, wherein the mask has a light emitting element provided at a proper portion of the mask for illuminating a room.

3. The backpack as claimed in claim 1 or 2, further comprising a portable oxygen container connected to the auxiliary cap via a hose for supplying oxygen to the wearer.

4. The backpack as claimed in any of claims 1 to 3, further comprising an auxiliary cover installed to the rear surface of the body for opening/closing the mask.

5. The backpack as claimed in claim 4, wherein the auxiliary cover has a tripod display made of luminescence or retroreflective material on an inner side of the auxiliary cover.

6. A backpack having a gas mask, the backpack comprising

a body made of a sack shape and having a front surface and a rear surface, a pair of shoulder bearing straps attached to the front surface and at least one pocket positioned at the rear surface for receiving trifling articles;
a mask overlapped over the front or rear surface of the body and having a detachable filter and an auxiliary cap for separately enclosing and sealing surroundings of a mouth and nose of a wearer; and
an auxiliary cover installed to the rear surface of the body for opening/closing the mask

7. The backpack as claimed in claim 6, wherein the mask has a light emitting element provided at a proper portion of the mask for illuminating a room.

8. The backpack as claimed in claim 6 or 7, further comprising a portable oxygen container connected the auxiliary cap via a hose for supplying oxygen to the wearer.

9. The backpack as claimed in any one of claims 6 to 8, further comprising an auxiliary cover installed to the rear surface of the body for opening/closing the mask.

FIG. 1

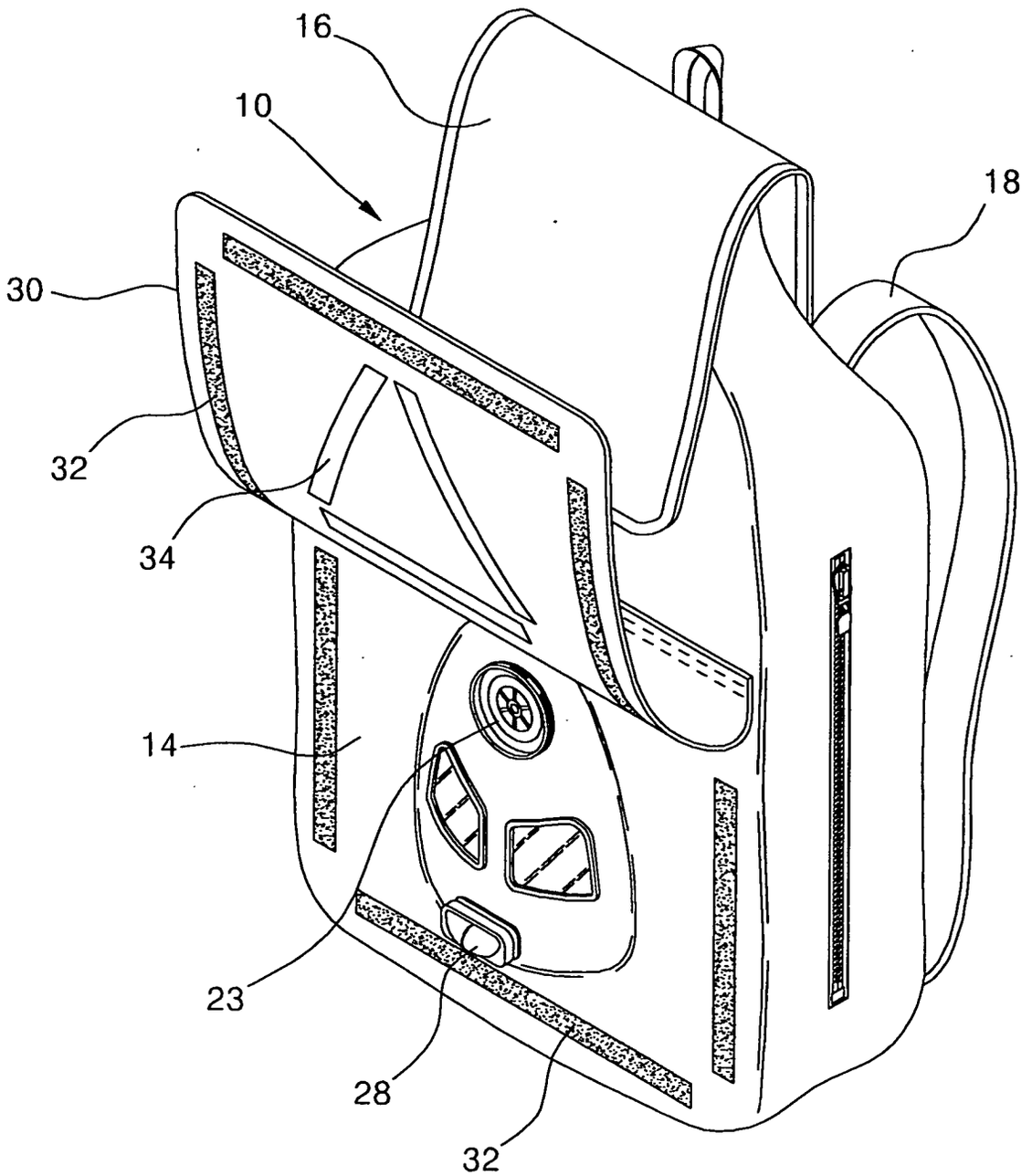


FIG. 2

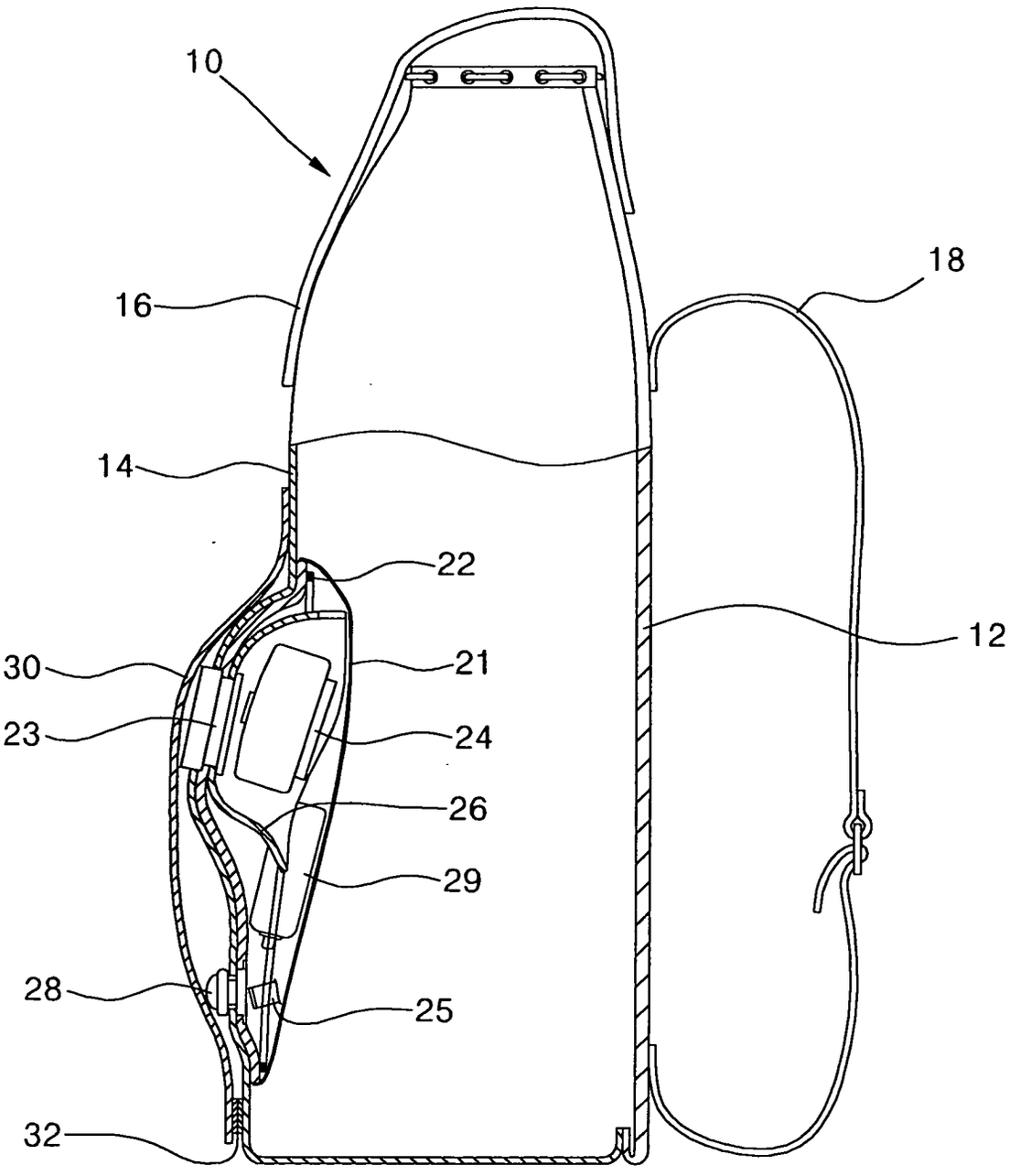


FIG. 3

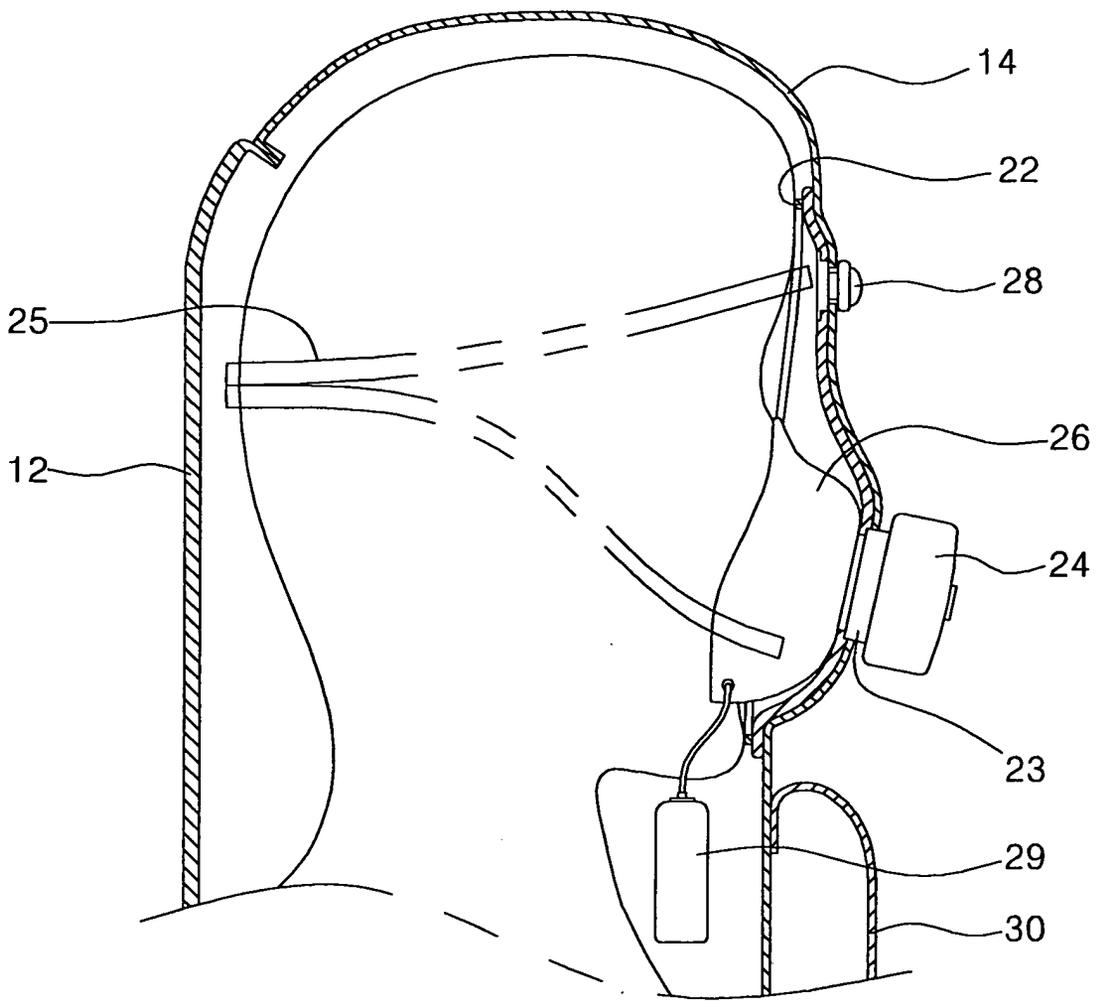
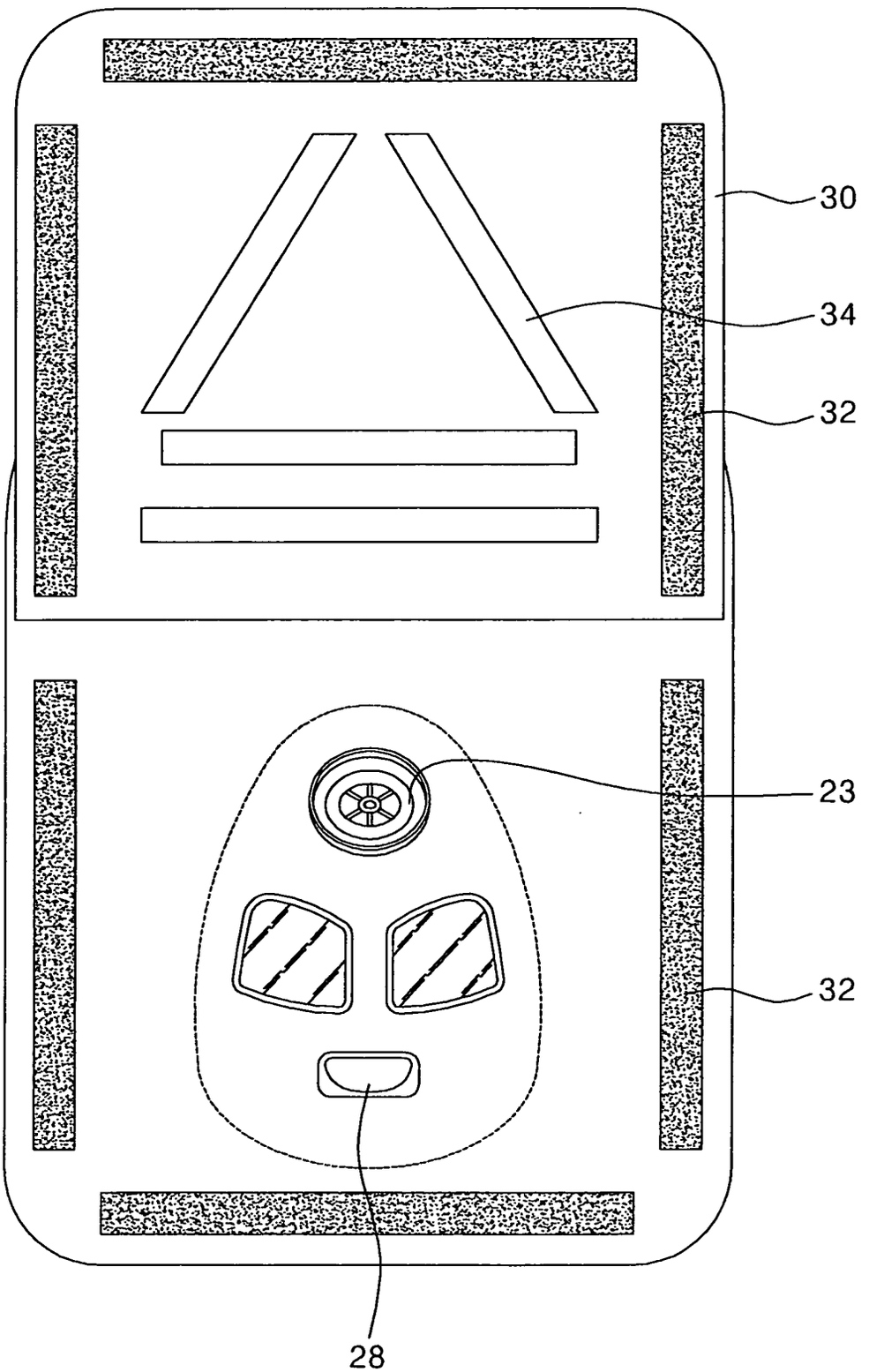


FIG. 4



European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 03 02 8281

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	GB 544 662 A (SEIDENKNOPF) 22 April 1942 (1942-04-22) * the whole document *	1	A45C9/00 A45F4/02 A45C15/06
Y	US 5 400 934 A (DUCROSL) 28 March 1995 (1995-03-28) * figure 2 *	1	
A		3	
Y	US 4 771 771 A (WALTHER) 20 September 1988 (1988-09-20) * figure 1 *	1	
A	US 5 303 701 A (HEINS ET AL) 19 April 1994 (1994-04-19) * figure 1 *	2	
A	US 5 957 349 A (KRULIK) 28 September 1999 (1999-09-28) * figure 4 *	4	
A	DE 608 272 C (ZOEBISCH) 19 January 1935 (1935-01-19) * figures 1-5 *	5	TECHNICAL FIELDS SEARCHED (Int.Cl.7) A45C A45F A62B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	26 March 2004	Dinescu, D

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 03 02 8281

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

26-03-2004

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 544662 A	22-04-1942	NONE	
US 5400934 A	28-03-1995	FR 2696915 A1	22-04-1994
		CH 686756 A5	28-06-1996
		DE 9314670 U1	09-12-1993
US 4771771 A	20-09-1988	DE 3400505 A1	18-07-1985
		DE 3471009 D1	16-06-1988
		EP 0148325 A2	17-07-1985
		JP 60158874 A	20-08-1985
		SU 1313333 A3	23-05-1987
US 5303701 A	19-04-1994	DE 4133235 A1	08-04-1993
		DE 59204588 D1	18-01-1996
		EP 0536546 A1	14-04-1993
US 5957349 A	28-09-1999	US 5779112 A	14-07-1998
DE 608272 C	19-01-1935	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82